

CLAIMS:

1. An epicyclic gear carrier assembly for use in an epicyclic gear train of a gas turbine engine, said epicyclic gear train having a central axis and a plurality of epicyclic gears rotatable about individual gear axes, said epicyclic gear carrier assembly comprising:

at least a carrier plate defining a plurality of circumferentially spaced axle bores being disposed radially outward from said central axis and each axle bore being co-axial with said individual gear axes, a plurality of corresponding gear axles being disposed within said axle bores and each of said epicyclic gears being rotatably mounted to a corresponding gear axle via bearing elements; and

an epicyclic carrier member comprising a plurality of axle engaging elements co-axial with said gear axles and engaged thereto by load transmission members such that load is transferred between said gear axles and said axle engaging elements while substantially bypassing said carrier plate.
2. The epicyclic gear carrier assembly as defined in claim 1, wherein said epicyclic carrier member comprises a substantially radially extending flange and an output element, and said axle engaging elements comprise axle pins axially extending from said flange.

3. The epicyclic gear carrier assembly as defined in claim 2, wherein said output element, said flange and said axle pins are integrally formed.
4. The epicyclic gear carrier assembly as defined in claim 2, wherein said axle pins are concentrically disposed within said gear axles.
5. The epicyclic gear carrier assembly as defined in claim 1, wherein said load transmission member comprises a deflection isolating element.
6. The epicyclic gear carrier assembly as defined in claim 5, wherein said deflection isolating element comprises a spherical bearing.
7. The epicyclic gear carrier assembly as defined in claim 5, wherein said deflection isolating element comprises a flexible element.
8. The epicyclic gear carrier assembly as defined in claim 6, wherein said spherical bearing defines a central axis that is co-axial with said individual gear axes.
9. The epicyclic gear carrier assembly as defined in claim 7, wherein said flexible element comprises a sleeve member.
10. The epicyclic gear carrier assembly as defined in claim 9, wherein said sleeve member is a substantially U-shaped double sleeve.

11. The epicyclic gear carrier assembly as defined in claim 9, wherein said sleeve member is integrally joined with said gear axles.
12. The epicyclic gear carrier assembly as defined in claim 1, wherein said gear axles are integrally formed with one of said carrier plates.
13. The epicyclic gear carrier assembly as defined in claim 1, wherein two carrier plates are provided, said carrier plates being axially spaced apart and defining a gap therebetween.
14. The epicyclic gear carrier assembly as defined in claim 1, wherein said carrier plates define corresponding central apertures therein, radially inward of said axle bores.
15. The epicyclic gear carrier assembly as defined in claim 1, wherein said epicyclic gear train comprises a central sun and a concentric ring gear, said plurality of epicyclic gears being circumferentially disposed between, and in meshing engagement with, said central sun gear and said ring gear.
16. The epicyclic gear carrier assembly as defined in claim 15, wherein said ring gear is fixed, such that said epicyclic gear carrier assembly rotates about said central axis, thereby providing a planetary gear train.
17. The epicyclic gear carrier assembly as defined in claim 15, wherein said epicyclic gear carrier is

- fixed, such that said ring gear rotates about said central axis, providing a star gear train.
18. The epicyclic gear carrier assembly as defined in claim 15, wherein one of said central sun gear and said ring gear provides torque input to said epicyclic gear carrier assembly.
 19. An epicyclic gear carrier assembly comprising: at least one carrier plate defining a plurality of circumferentially spaced axle bores therethrough disposed radially outward from a central axis, a plurality of corresponding gear axles being disposed within said axle bores for rotatably supporting a plurality of epicyclic gears thereon; and an epicyclic carrier member comprising a plurality of axle engaging elements co-axial with said gear axles and engaged thereto by load transmission members such that load is transferred between said gear axles and said axle engaging elements while substantially bypassing said carrier plate.
 20. The epicyclic gear carrier assembly as defined in claim 19, wherein said epicyclic gear carrier assembly is adapted for use in an epicyclic gear train of a gas turbine engine.
 21. An epicyclic gear carrier assembly for used in an epicyclic gear train of a gas turbine engine having a sun gear rotatable about a central axis, a ring gear, and a plurality of epicyclic gears each rotatable about an individual axis of rotation, said epicyclic gear carrier assembly comprising:

a plurality of gear support means each having one of said epicyclic gears rotatably mounted thereto by bearing elements such that said gear support means are co-axial with said individual axis of rotation, said gear support means being engaged to at least one carrier plate; and

an epicyclic carrier member having a plurality of circumferentially spaced gear engaging means which axially extend and are disposed radially outward from said central axis, each of said gear engaging means being co-axial with one of said gear support means and engaged thereto by a deflection isolating load transmission means, such that load is transferred between said gear support means and said gear engaging means while substantially bypassing said carrier plate.